**In the Specification**:

Replace the paragraph beginning at page 17, line 34, with the following rewritten paragraph:

Communications is then attempted (step 78). The success of the communication attempt is then evaluated (step 80). If communications are not successful, the particular peak is deleted from the list (step 82), and the method continues with step 72). If communication is successful, the method terminates. Timing acquisition and fine frequency acquisition are then performed (described in more detail below).

Replace the paragraph beginning at page 26, line 19, with the following rewritten paragraph:

This rotation operation brings in the received signal at phase $\pm\pi/4$, $\pm3\pi/4$, etc. in accordance with the data (for noisless signals). Note that steps 132, 134, and 136 through 140 comprise the detail implementation of step 130.

Replace the paragraph beginning at page 26, line 24, with the following rewritten paragraph:

A block diagram illustrating pre-tracking and tracking portion of the variable rate modem 210 is shown in Figure 13. This block diagram describes both the pre-tracking and tracking stages of the main loop processing. The I and Q data output from the matched filter is input to a mixer (multiplier) 211. The I and Q output of the mixer 211 is input to AGC estimation 213, timing detector 214 and phase detector 215.

Replace the paragraph beginning at page 28, line 25, with the following rewritten paragraph:

7. to prevent clipping at the input to the A/D converter, the threshold is adapted every K*T ms (K $\approx$ 8, 16).

8. find $Y_n$ in an *inverse_AGC_table* and write the value to the AGC circutry in the IF module;

8. increment count by one (step 202);

9. after N samples (N = 8 in he above example) reset count to 0 and calculate Ems (step 184);

Replace the paragraph beginning at page 31, line 9, with the following rewritten paragraph:

With reference to Figure 14, the next step after timing tracking is phase tracking (step 156). A block diagram illustrating the phase tracking portion of the variable rate modem is shown in Figure 17. The phase tracking portion 250 comprises three main components including a phase detector 254, loop filter 258 and a frequency jump 262 if the frequency is larger than a threshold.

Replace the paragraph beginning at page 31, line 22, with the following rewritten paragraph:

The output of the phase detector is input to a loop filter 258. The filter is presented in state space representation. The filter is defined by the parameters $a_0$ and $a_l$. The Doppler estimate $D_n$, is preferably also input to the filter from an external loop

256. The equations are shown below wherein $F_n$ and $P_n$ denote the frequency and phase, respectively. Note that the phase $P_n$ is the same phase discussed earlier denoted $\varphi$ or $\Theta$. The filter preferably comprises an infinite impulse response (IIR) filter. The loop filter performs the following: